## Manometers Chem Worksheet 13-2

A manometer is a device that measures the pressure of a gas in an enclosed container. It is made from a U-shaped tube filled with mercury. The pressure of the gas in the container is compared to the pressure from the atmosphere. If the gas pressure is the same as the atmospheric pressure the level of mercury in both sides of the U-tube will be the same. If the gas is at a higher pressure than the atmosphere the mercury level on the side open to the atmosphere will be higher. If the gas is at a lower pressure than the atmosphere the mercury level on the side open to the atmosphere will be lower.



## example

An enclosed container of gas is connected to a manometer. The mercury level is 8 cm lower on the side connected to the gas sample. If atmospheric pressure is .984 atm find the pressure of the gas in the container.

- draw a picture



## Solve the following problems. Draw a picture of the manometer for each problem.

- 1. What is the pressure of the neon gas sample in the manometer shown to the right?
- 2. A container of helium is connected to a manometer and the mercury level is 145 mm lower on the side open to the atmosphere. Atmospheric pressure is 775 mm Hg. Find the pressure of the helium.
- 3. The mercury in a manometer is 38 mm lower on the side connected to sample of oxygen gas. If the atmospheric pressure is 95.2 kPa determine the pressure of the oxygen.
- 4. What is the pressure of the carbon dioxide in the manometer shown to the right?
- 5. The atmosphere has a pressure of 680 torr. An air-filled container has a pressure of 18.9 PSI and is connected to a manometer. Draw a picture of the manometer and determine the height of the mercury column supported by the air.
- 6. A basketball is attached to a manometer and the mercury is 18 mm higher on the side connected to the atmosphere. The pressure of the atmosphere is 0.95 atm. Find the pressure in the basketball. #7
- 7. What is the pressure in pascals for the air sample in the manometer pictured to the right?
- 8. A gas container is connected to a manometer. The mercury in the manometer is 7.2 cm lower on the side open to the atmosphere. Atmospheric pressure is measured to be 755 mm Hg. What is the pressure of the gas in atmospheres?



Patr

Neon

= 748 mmHa



WS13-2Manometers